AR-B104C Board

AR-B104C-4P PCI104 with 4 COM / AR-B104C-8P PCI104 with 8 COM

User Manual

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Revision

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1 INTRODUCTION

The Acrosser AR-B104C presents you the most reliable and cost effective UART solution, which provides RS-232/422/485 connection abilities to your system to control related industrial devices. Via PCI-104 interface, the AR-B104C can be connected more robust and transmit more effecient than PC-104. It also contain jumper for the customer to switch between RS-232/422/485 without any software setting.

1.1Specifications

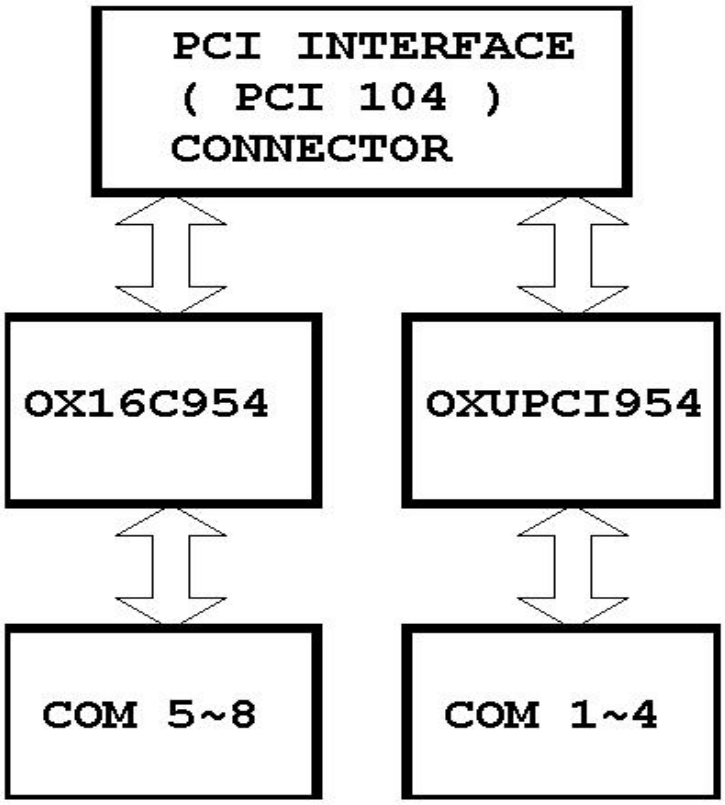
- PCI 104 Compliant.
- 4 UART channels(AR-B104C/4P), could option to 8 channel(AR-B104C/8P).
- Compatible with 16C550 performance UART channel.
- Supports all RS-232C transceiver mode. RS232/RS485/RS422 selectable by jumper. Reserve 2 GPIO from Oxford to identify the board is AR-B104C/4P, AR-B104C/8P, AR-B104B/4P, AR-B104B/8P Maximum baud rate to 15Mbps in asynchronous mode.
- Connector for 4P：2 x 22 2.0mm pin head 180 degree.
- Connector for 8P：two sets of 2 x 22 2.0mm pin head 180 degree.
- Operation Temperature：AR-B104C/4P: -20℃ to 85℃；AR-B104C/8P: -20℃ to 70℃.
- RoHS Compliance.

1.2 Package Contents

Check if the following items are included in the package.

- Quick Manual.
- AR-B104C-4P/AR-B104C-8P.
- 1 x Software Utility CD.

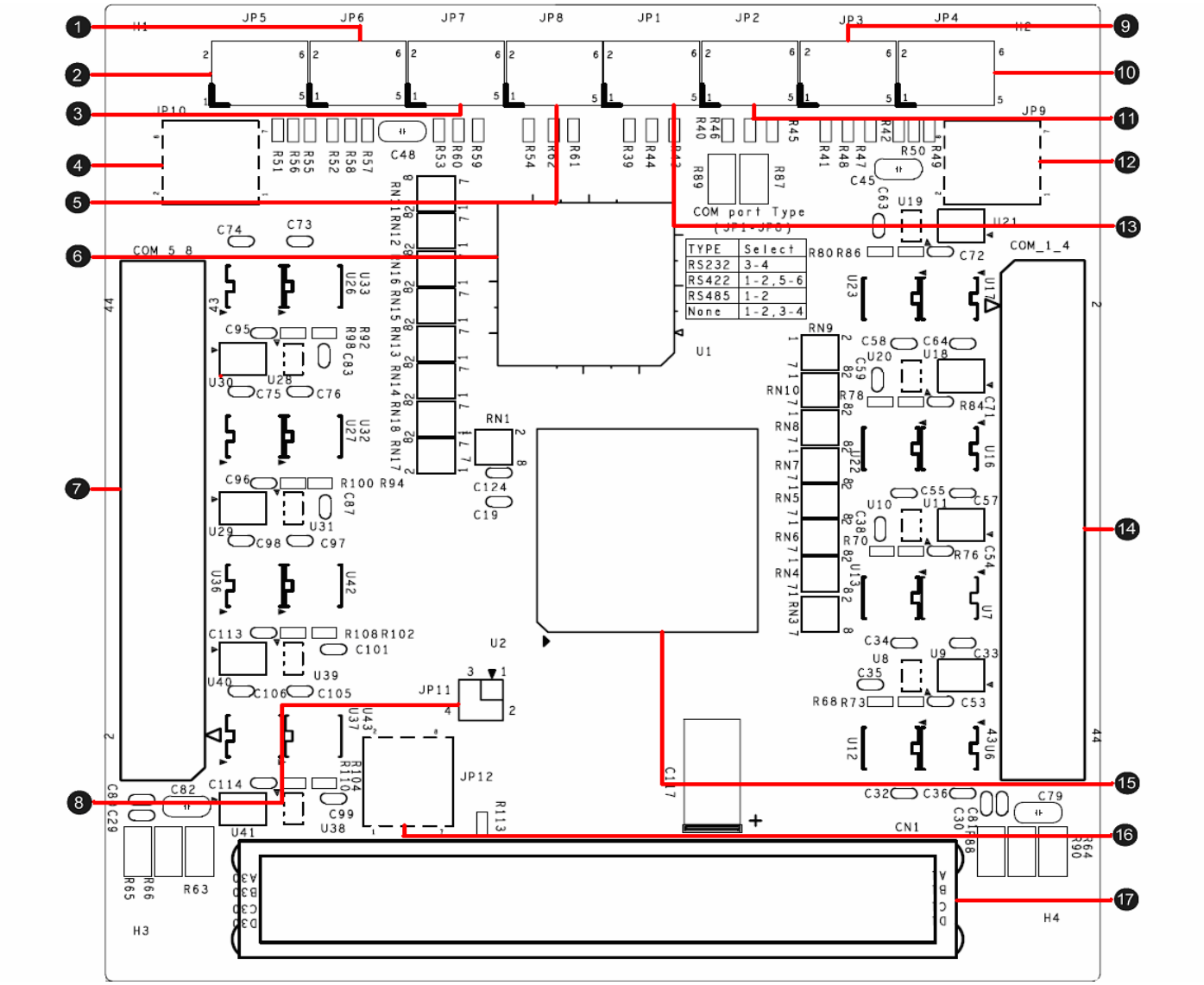
1.3 Block Diagram



2 H/W INFORMATION

This chapter describes the installation of AR-B104C. At first, it shows the function diagram and the layout of AR-B104C. It then describes the unpacking information which you should read carefully, as well as the jumper/switch settings for the AR-B104C configuration

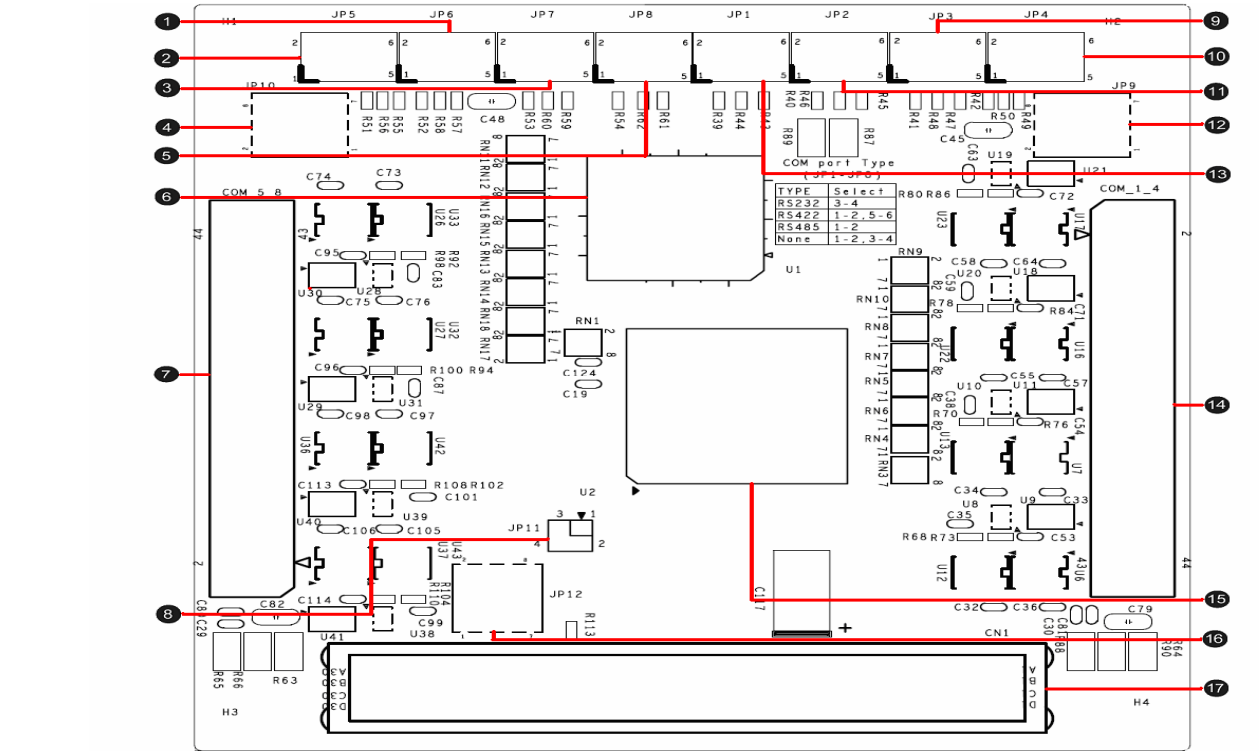
2.1 Locations (Top side)



1	**JP6** COM6 transfer type select	10	JP4 COM4 transfer type select
2	**JP5** COM5 transfer type select	11	**JP2** COM2 transfer type select
3	**JP7** COM7 transfer type select	12	**JP9** COM1 ~ COM4 termination enable
4	**JP10** COM5 ~ COM8 termination enable	13	**JP1** COM1 transfer type select
5	**JP8** COM8 transfer type select	14	**COM 1~4** COM1 ~ COM4 output port
6	**UART Controller 1** COM8 transfer type select	15	**UART Controller 2** OXuPCI954 for COM1 ~ COM4
7	**COM 5~8** COM5 ~ COM8 output port	16	**JP12** PCI INT signal select
8	**JP11** PCI Clock and IDSEL signal select	17	**CN1** PCI 104 slot signal from M/B
9	**JP3** COM3 transfer type select		

2.2 Connectors and Jumper Setting

2.2.1 Locations (Top side)



1	**JP6** COM6 transfer type select	10	JP4 COM4 transfer type select
2	**JP5** COM5 transfer type select	11	**JP2** COM2 transfer type select
3	**JP7** COM7 transfer type select	12	**JP9** COM1 ~ COM4 termination enable
4	**JP10** COM5 ~ COM8 termination enable	13	**JP1** COM1 transfer type select
5	**JP8** COM8 transfer type select	14	**COM 1~4** COM1 ~ COM4 output port
6	**UART Controller 1** COM8 transfer type select	15	**UART Controller 2** OXuPCI954 for COM1 ~ COM4
7	**COM 5~8** COM5 ~ COM8 output port	16	**JP12** PCI INT signal select
8	**JP11** PCI Clock and IDSEL signal select	17	**CN1** PCI 104 slot signal from M/B
9	**JP3** COM3 transfer type select		

2.3 Connector and Jumper Setting

2.1 JP6
COM6 transfer type select

Transfer type	Select
RS-232	3 - 4
RS-422	1 – 2, 5 - 6
RS-485	1 - 2

2.2 JP5
COM5 transfer type select

Transfer type	Select
RS-232	3 - 4
RS-422	1 – 2, 5 - 6
RS-485	1 - 2

2.3 JP7
COM7 transfer type select

Transfer type	Select
RS-232	3 - 4
RS-422	1 – 2, 5 - 6
RS-485	1 - 2

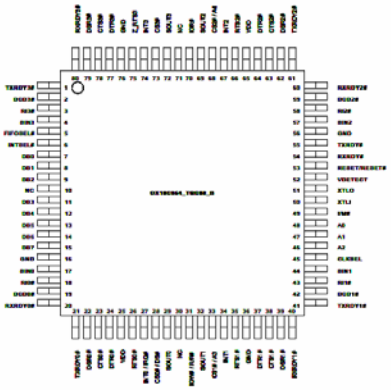
2.4 JP10
COM5 ~ COM8 termination enable

120R termination enable	Select
COM5 120R termination enable	1 - 2
COM6 120R termination enable	3 - 4
COM7 120R termination enable	5 - 6
COM8 120R termination enable	7 - 8

2.5 JP8
COM8 transfer type select

Transfer type	Select
RS-232	3 - 4
RS-422	1 – 2, 5 - 6
RS-485	1 - 2

2.6 UART Controller 1
OX16C954 UART Controller for COM5~COM8



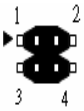
2.7 COM 5~8

COM5 ~ COM8 output port

Pin	RS-232	RS-422	RS-485
1	DCD_8	N/C	N/C
2	DSR_8	Rx-_8	Data-_8
3	RXD_8	Rx+_8	Data+_8
4	RTS_8	N/C	N/C
5	TXD_8	N/C	N/C
6	CTS_8	Tx-_8	N/C
7	DTR_8	N/C	N/C
8	RI_8	Tx+_8	N/C
9	GND	GND	GND
10	+5V	+5V	+5V
11	DCD_7	N/C	N/C
12	DSR_7	Rx-_7	Data-_7
13	RXD_7	Rx+_7	Data+_7
14	RTS_7	N/C	N/C
15	TXD_7	N/C	N/C
16	CTS_7	Tx-_7	N/C
17	DTR_7	N/C	N/C
18	RI_3	Tx+_7	N/C
19	GND	GND	GND
20	+5V	+5V	+5V
21	DCD_6	N/C	N/C
22	DSR_6	Rx-_6	Data-_6
23	RXD_6	Rx+_6	Data+_6
24	RTS_6	N/C	N/C
25	TXD_6	N/C	N/C
26	CTS_6	Tx-_6	N/C
27	DTR_6	N/C	N/C
28	RI_6	Tx+_6	N/C
29	GND	GND	GND
30	+5V	+5V	+5V
31	N/C	N/C	N/C
32	N/C	N/C	N/C
33	DCD_5	N/C	N/C
34	DSR_5	Rx-_5	Data-_5
35	RXD_5	Rx+_5	Data+_5
36	RTS_5	N/C	N/C
37	TXD_5	N/C	N/C
38	CTS_5	Tx-_5	N/C
39	DTR_5	N/C	N/C
40	RI_5	Tx+_5	NC
41	GND	GND	GND
42	+5V	+5V	+5V
43	N/C	N/C	N/C
44	N/C	N/C	N/C

2.8 JP11

PCI INT and IDSEL signal select



PCI INT and IDSEL signal select	Select
CLK0, IDSEL 0	1-2, 3-4
CLK1, IDSEL 1	1 - 2
CLK2, IDSEL 2	3 - 4
CLK2, IDSEL 3	N/A

2.9 JP3

COM3 transfer type select

Transfer type	Select
RS-232	3 - 4
RS-422	1 – 2, 5 - 6
RS-485	1 - 2

2.10 JP4

COM4 transfer type select

Transfer type	Select
RS-232	3 - 4
RS-422	1 – 2, 5 - 6
RS-485	1 - 2

2.11 JP2

COM2 transfer type select

Transfer type	Select
RS-232	3 - 4
RS-422	1 – 2, 5 - 6
RS-485	1 - 2

2.12 JP9

COM1 ~ COM4 termination enable

120R Termination enable	Select
COM1 120R termination enable	1 - 2
COM2 120R termination enable	3 - 4
COM3 120R termination enable	5 – 6
COM4 120R termination enable	7 - 8

2.13 JP1

COM1 transfer type select

Transfer type	Select
RS-232	3 - 4
RS-422	1 – 2, 5 - 6
RS-485	1 - 2

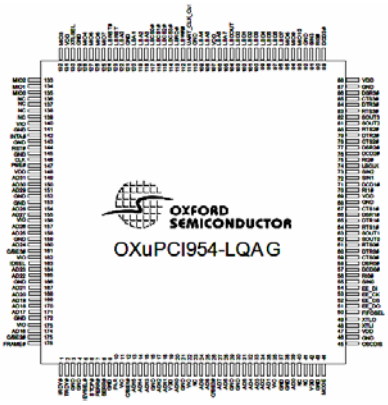
2.14 COM 1~4

COM1~ COM4 output port

Pin	RS-232	RS-422	RS-485
1	DCD_4	N/C	N/C
2	DSR_4	Rx-_4	Data-_4
3	RXD_4	Rx+_4	Data+_4
4	RTS_4	N/C	N/C
5	TXD_4	N/C	N/C
6	CTS_4	Tx-_4	N/C
7	DTR_4	N/C	N/C
8	RI_4	Tx+_4	N/C
9	GND	GND	GND
10	+5V	+5V	+5V
11	DCD_3	N/C	N/C
12	DSR_3	Rx-_3	Data-_3
13	RXD_3	Rx+_3	Data+_3
14	RTS_3	N/C	N/C
15	TXD_3	N/C	N/C
16	CTS_3	Tx-_3	N/C
17	DTR_3	N/C	N/C
18	RI_3	Tx+_3	N/C
19	GND	GND	GND
20	+5V	+5V	+5V
21	DCD_2	N/C	N/C
22	DSR_2	Rx-_2	Data-_2
23	RXD_2	Rx+_2	Data+_2
24	RTS_2	N/C	N/C
25	TXD_2	N/C	N/C
26	CTS_2	Tx-_2	N/C
27	DTR_2	N/C	N/C
28	RI_2	Tx+_2	N/C
29	GND	GND	GND
30	+5V	+5V	+5V
31	N/C	N/C	N/C
32	N/C	N/C	N/C
33	DCD_1	N/C	N/C
34	DSR_1	Rx-_1	Data-_1
35	RXD_1	Rx+_1	Data+_1
36	RTS_1	N/C	N/C
37	TXD_1	N/C	N/C
38	CTS_1	Tx-_1	N/C
39	DTR_1	N/C	N/C
40	RI_1	Tx+_1	N/C
41	GND	GND	GND
42	+5V	+5V	+5V
43	N/C	N/C	N/C
44	N/C	N/C	N/C

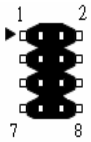
2.15 UART Controller 2

OXuPCI954 UART Controller for COM1~COM4



2.16 JP12

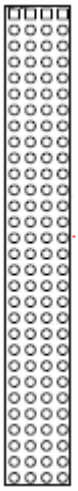
PCI INT signal select



PCI INT signal select	Select
INTA	1 – 2
INTB	3 - 4
INTC	5 - 6
INTD	7 - 8

2.17 CN1

PCI 104 slot signal from M/B



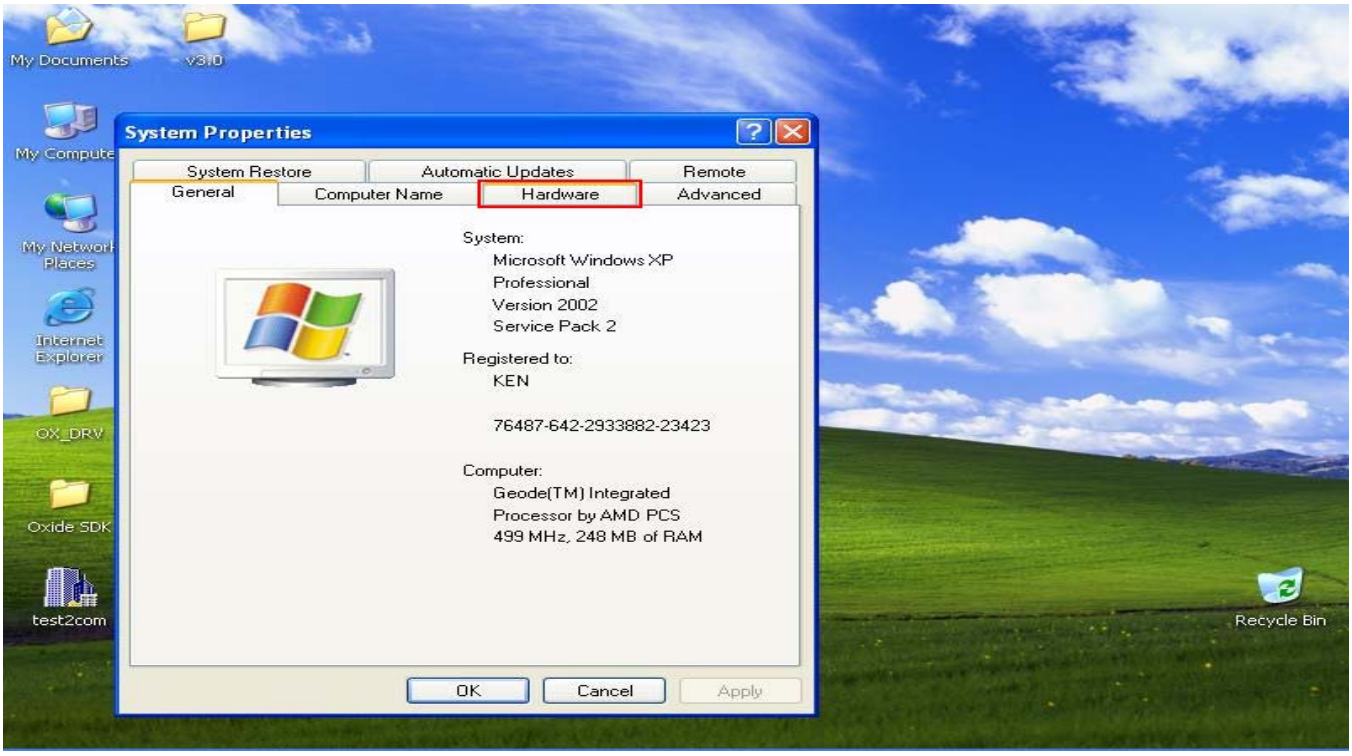
OXuPCI954 Drive Installation Guide

When you install the OXuPCI954 drivers in AR-B104C, the driver's installation sequence must follow this guide. If the COM ports sequences define that you want to set as the same with hardware define. For AR-B104C/4P, you only need to install "PCI Serial Port" driver (step1 to step13). If you use AR-B104C/8P, you need to install "PCI Serial Port" driver (step1 to step13) and "Other PCI Bridge Device" driver (step14 to step22). If you want to adjust the COM port properties, you can follow step23 to step26 to adjust the COM port properties.

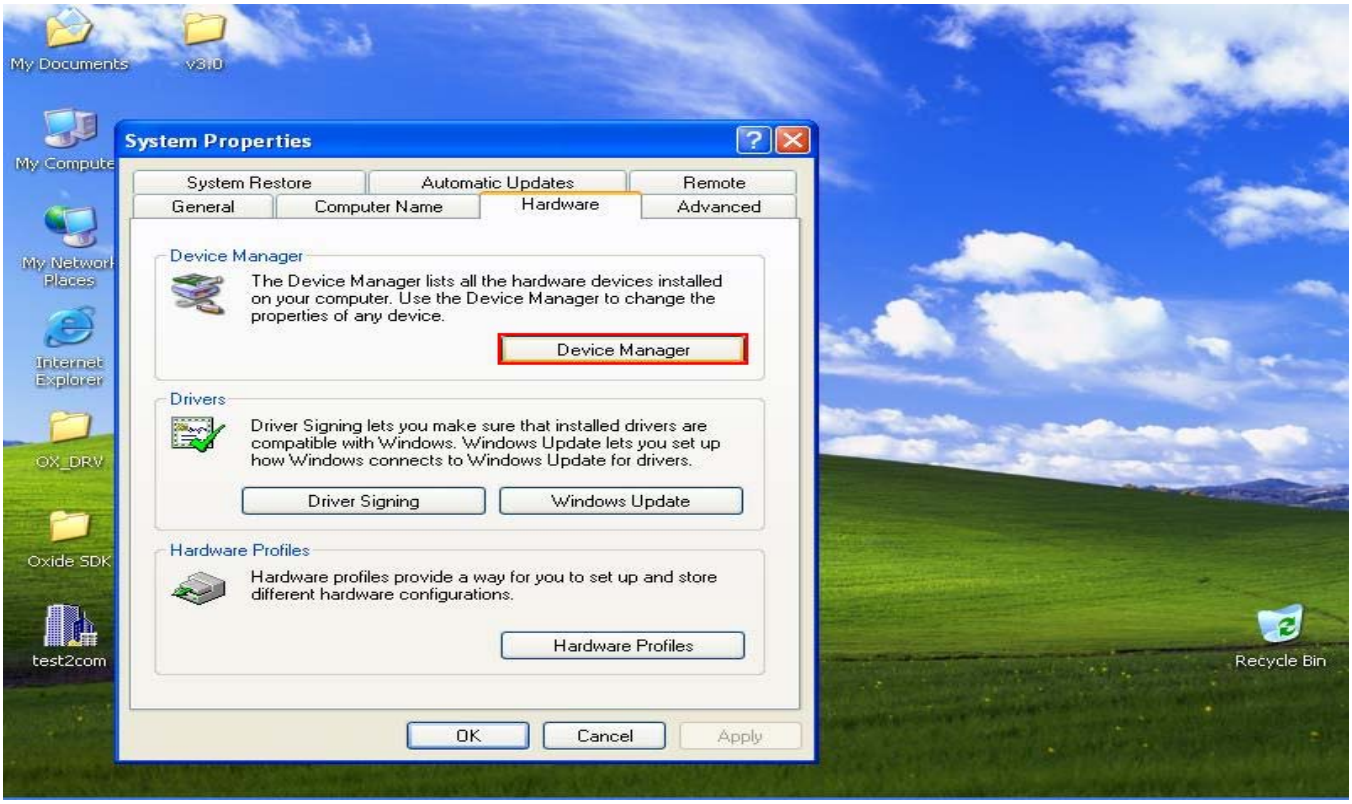
Installation Step：

1. Click the right button of mouse on "My Computer" icon, the screen will show the function list then select the "Properties" function.

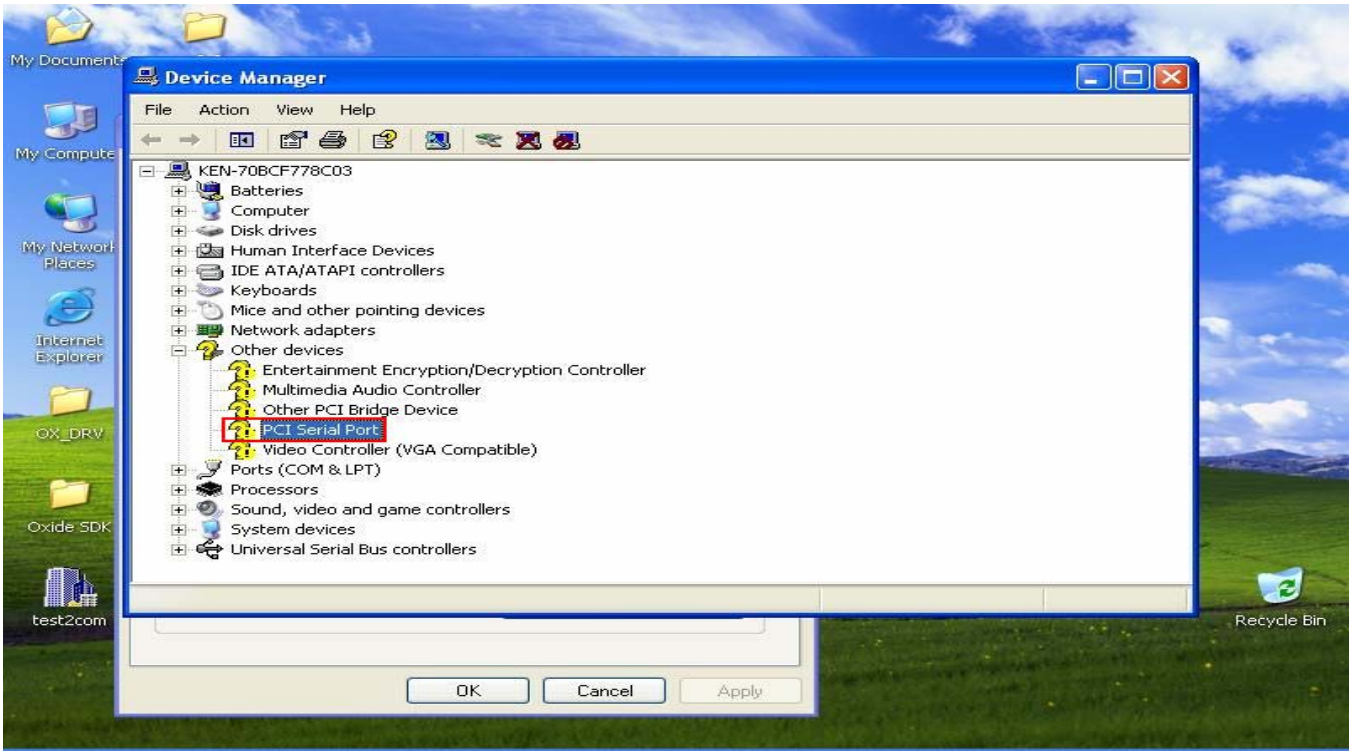
2. When “System Properties” appear on screen, select “Hardware” item.



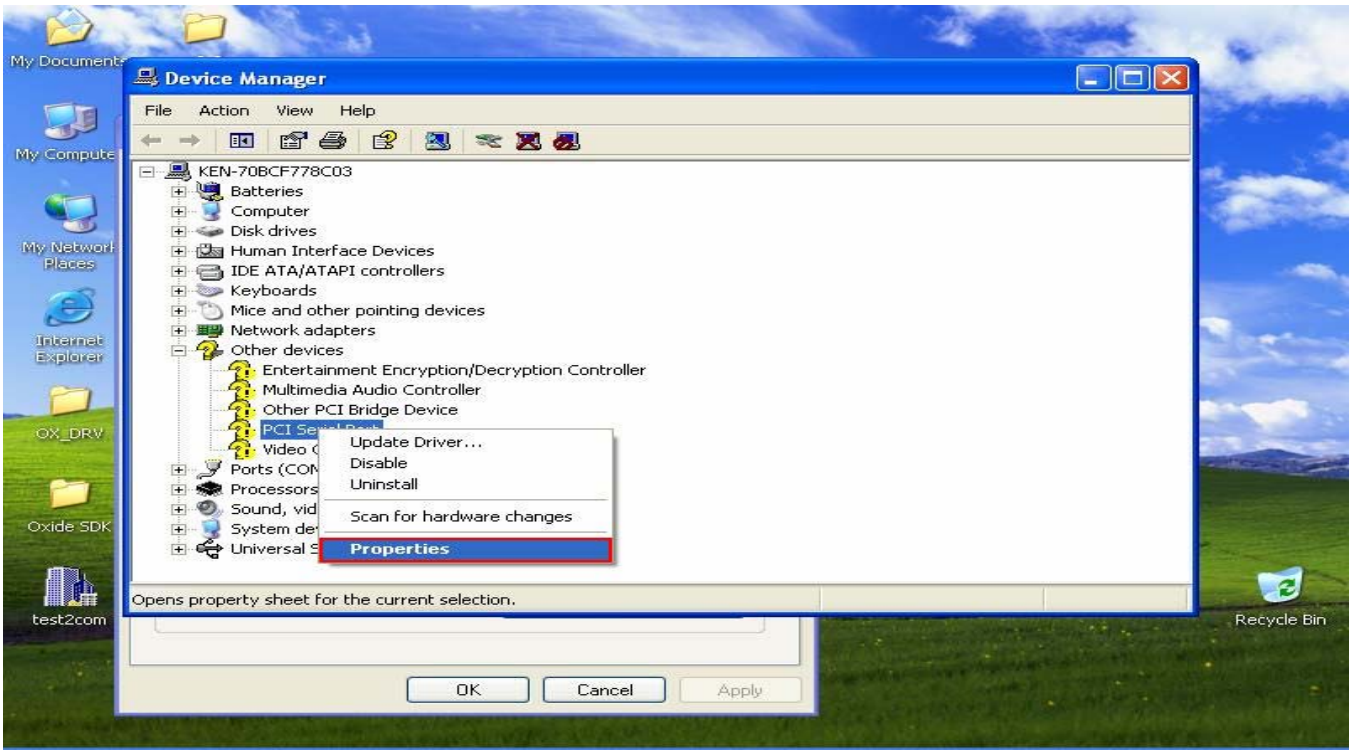
3. In “Hardware” Setting, select “Device Manager”



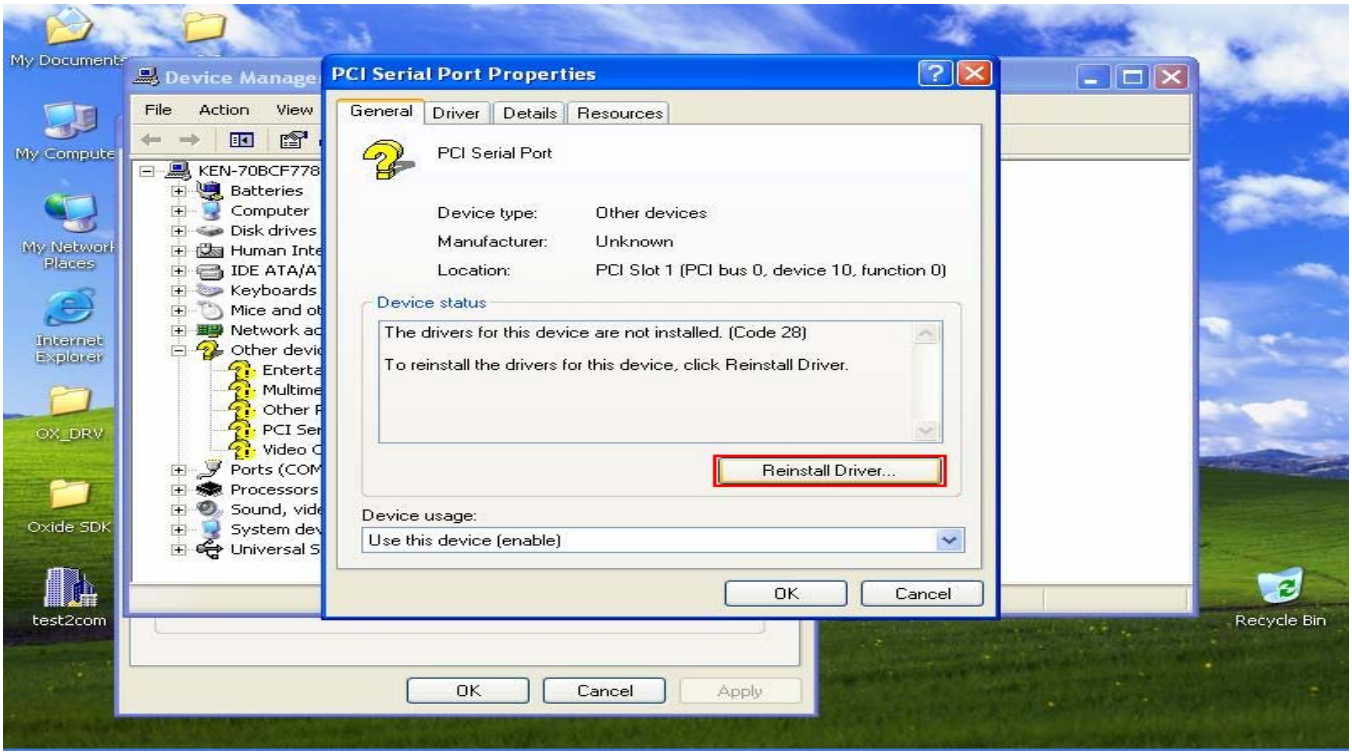
4. Select "? PCI Serial Port" device in system devices list.



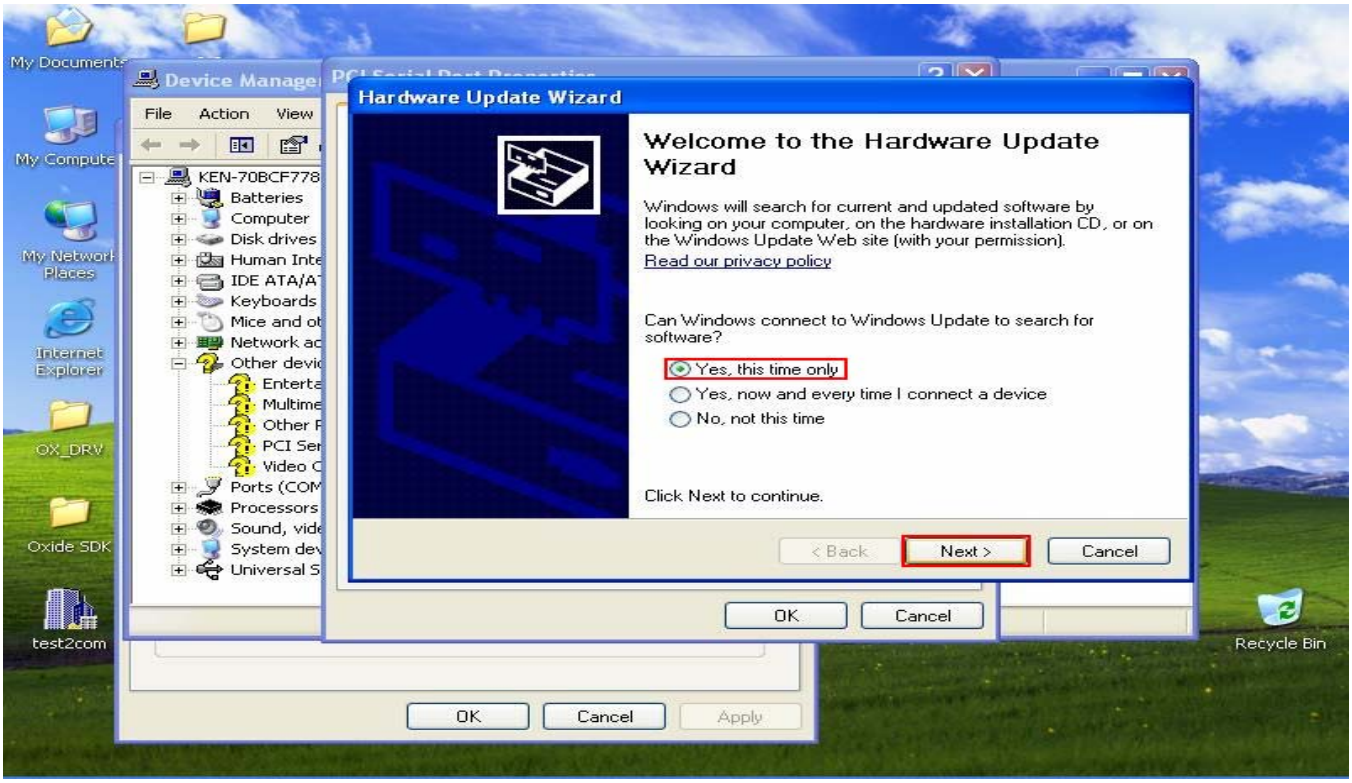
5. Click the right button of mouse on "? PCI Serial Port" icon, then screen will shows the function list then selects the "Properties" function.



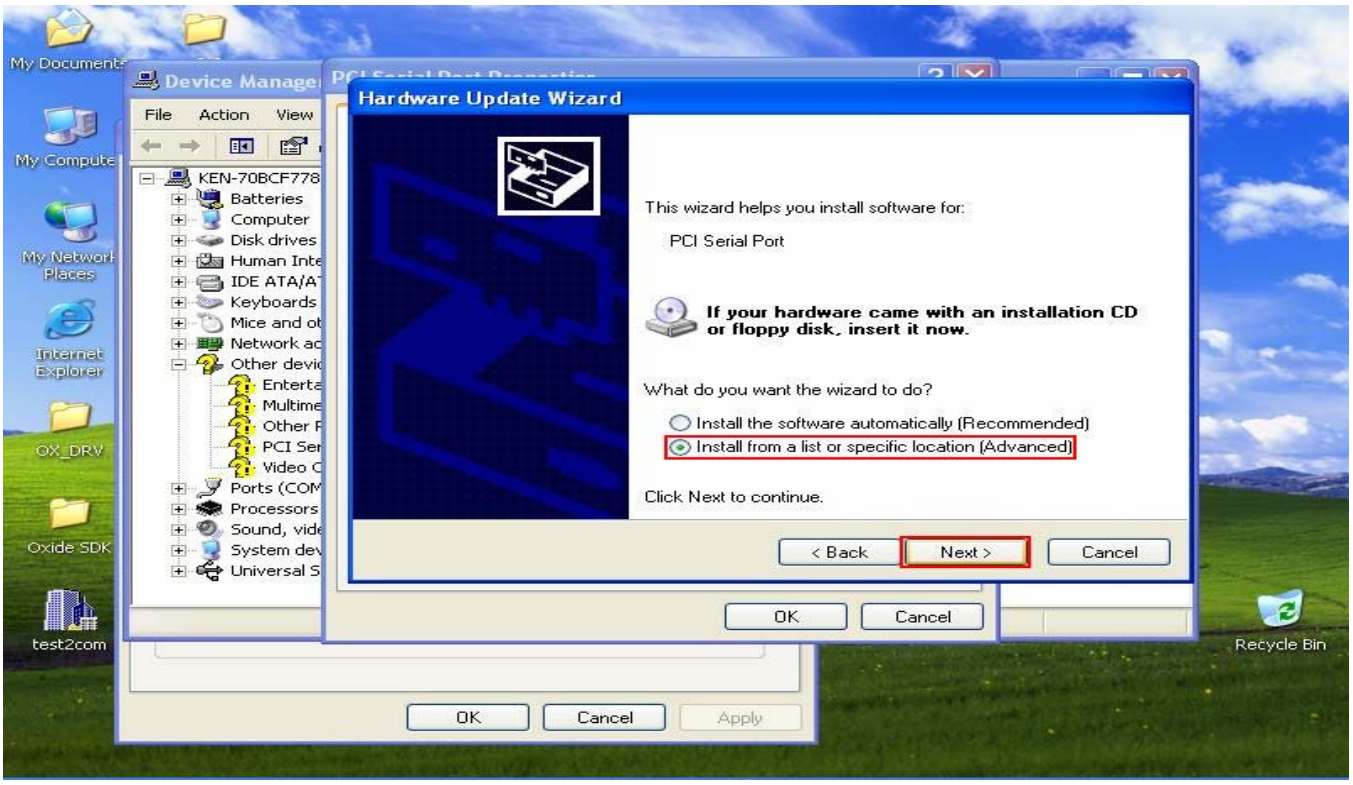
6. When "? PCI Serial Port" Properties appear on screen, select "Reinstall Driver" item.



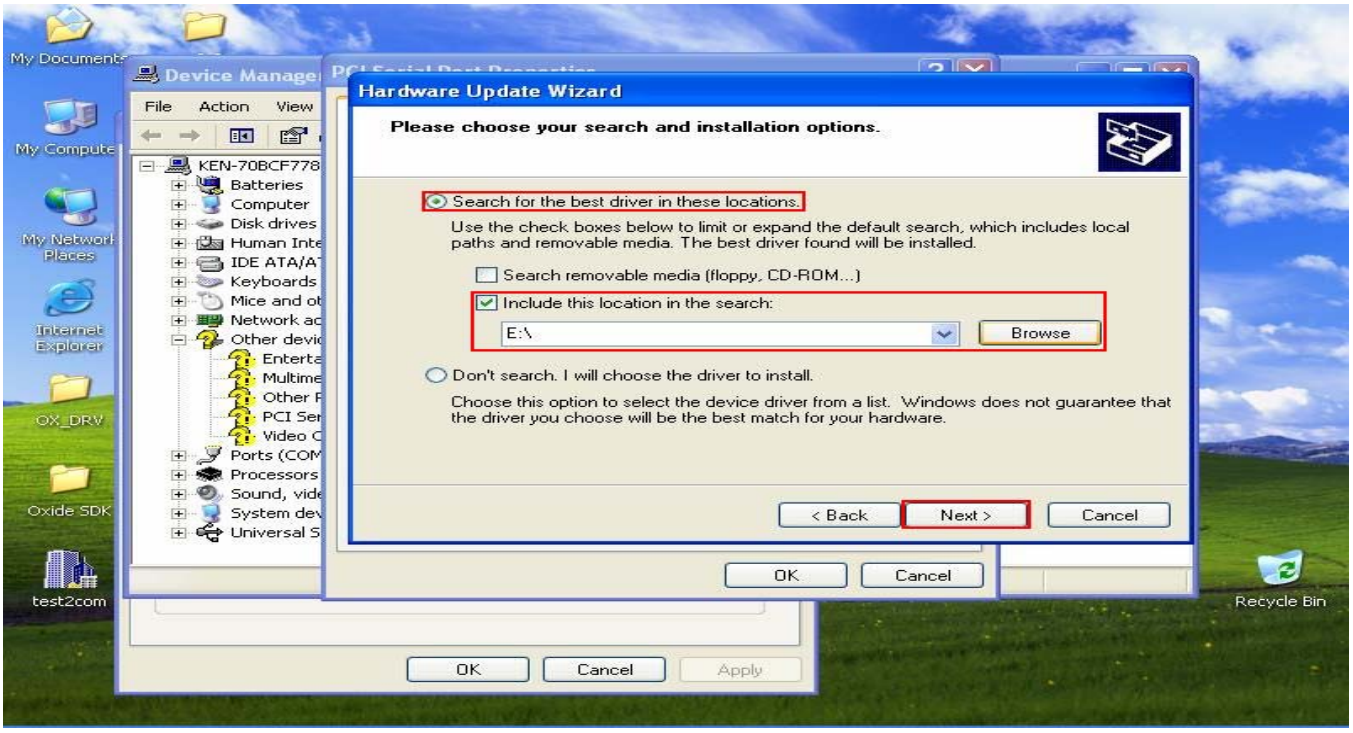
7. After driver install screen appear, select "Yes, this time only" then select "Next".



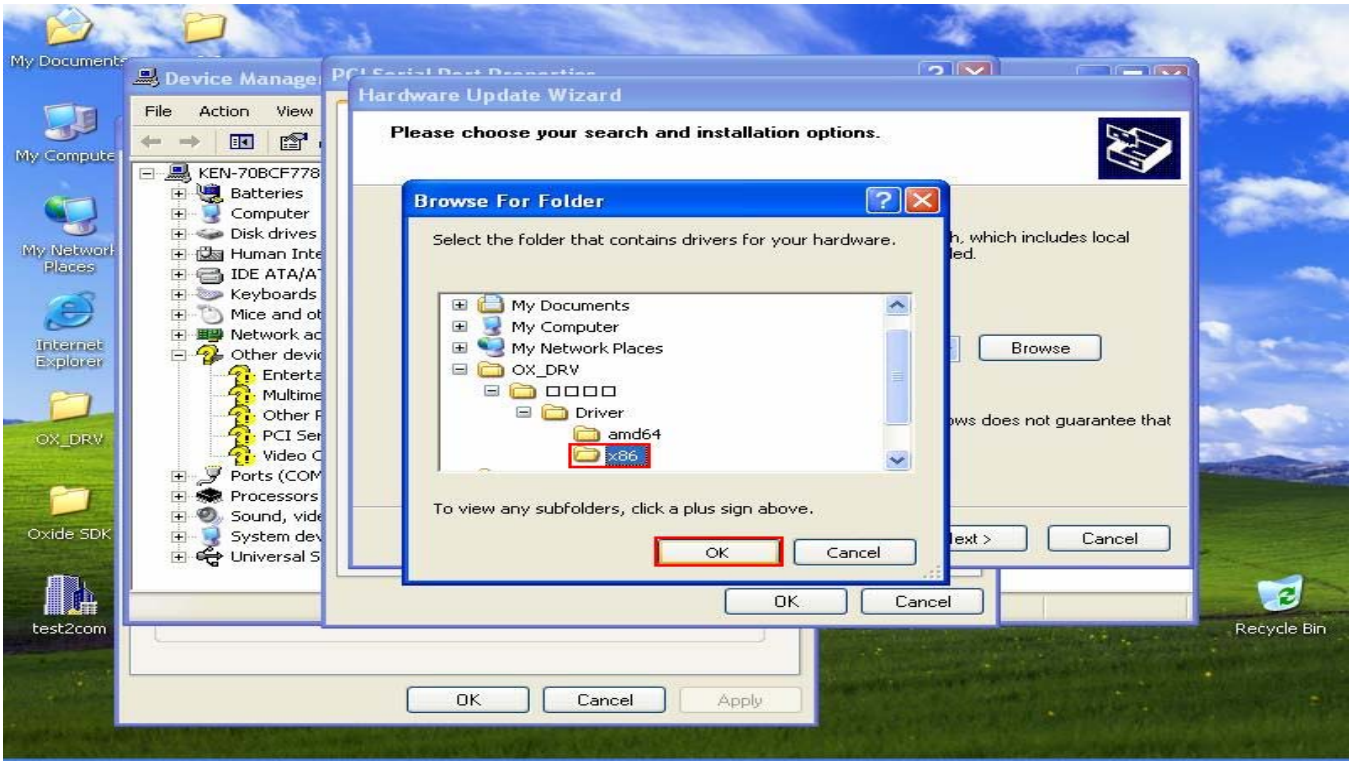
8. Select “Install from a list or specific location (Advanced)” then select “Next”.



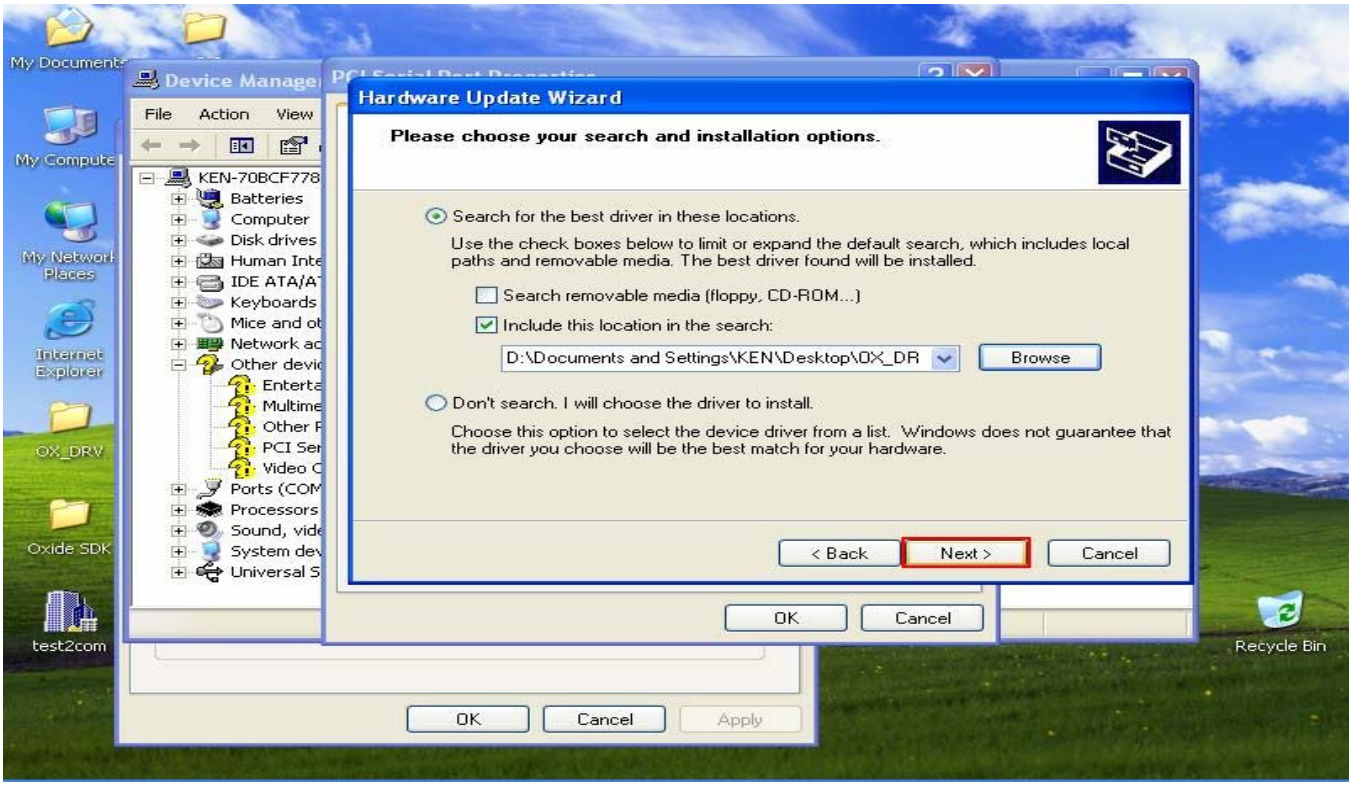
9. Select “Search for the best driver in these locations” then select “Include this location in the search”. Select “Browse” for the file path of driver location then select “Next”.



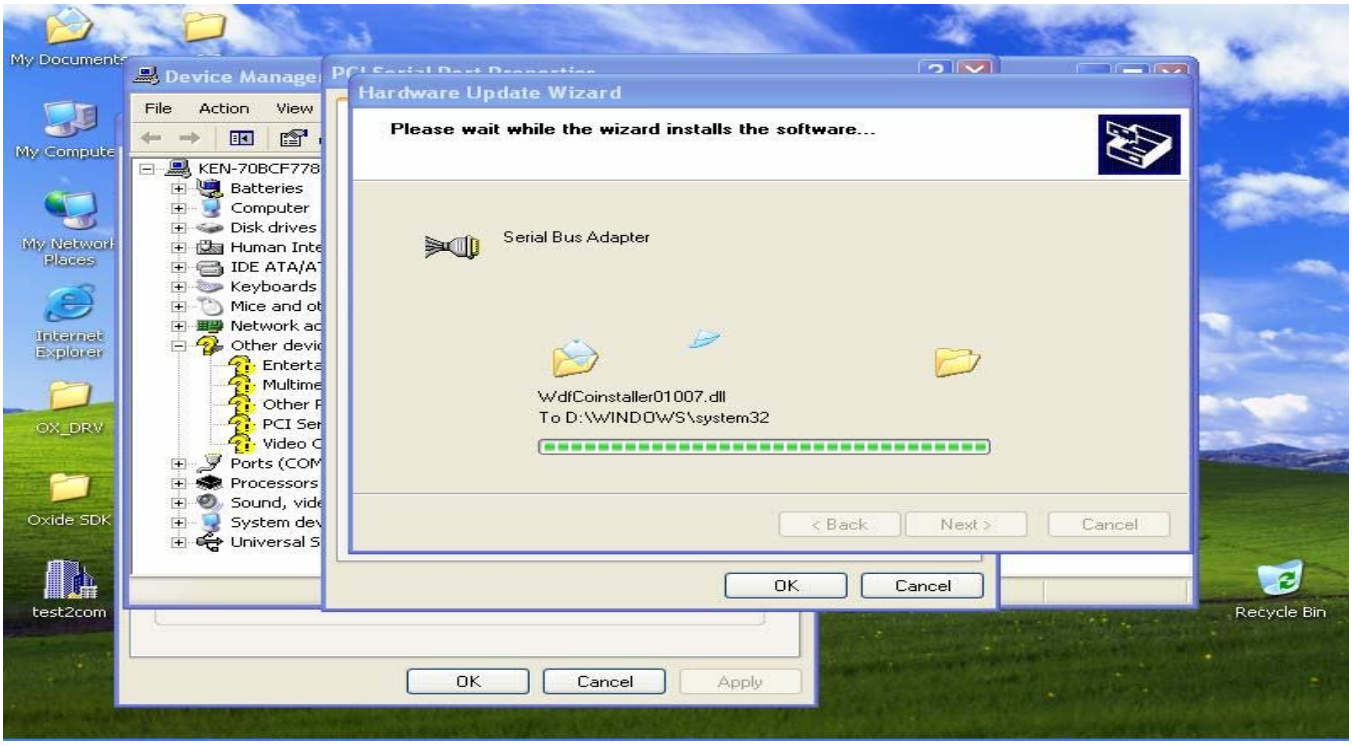
10. Select the file path of driver location then select “OK”.



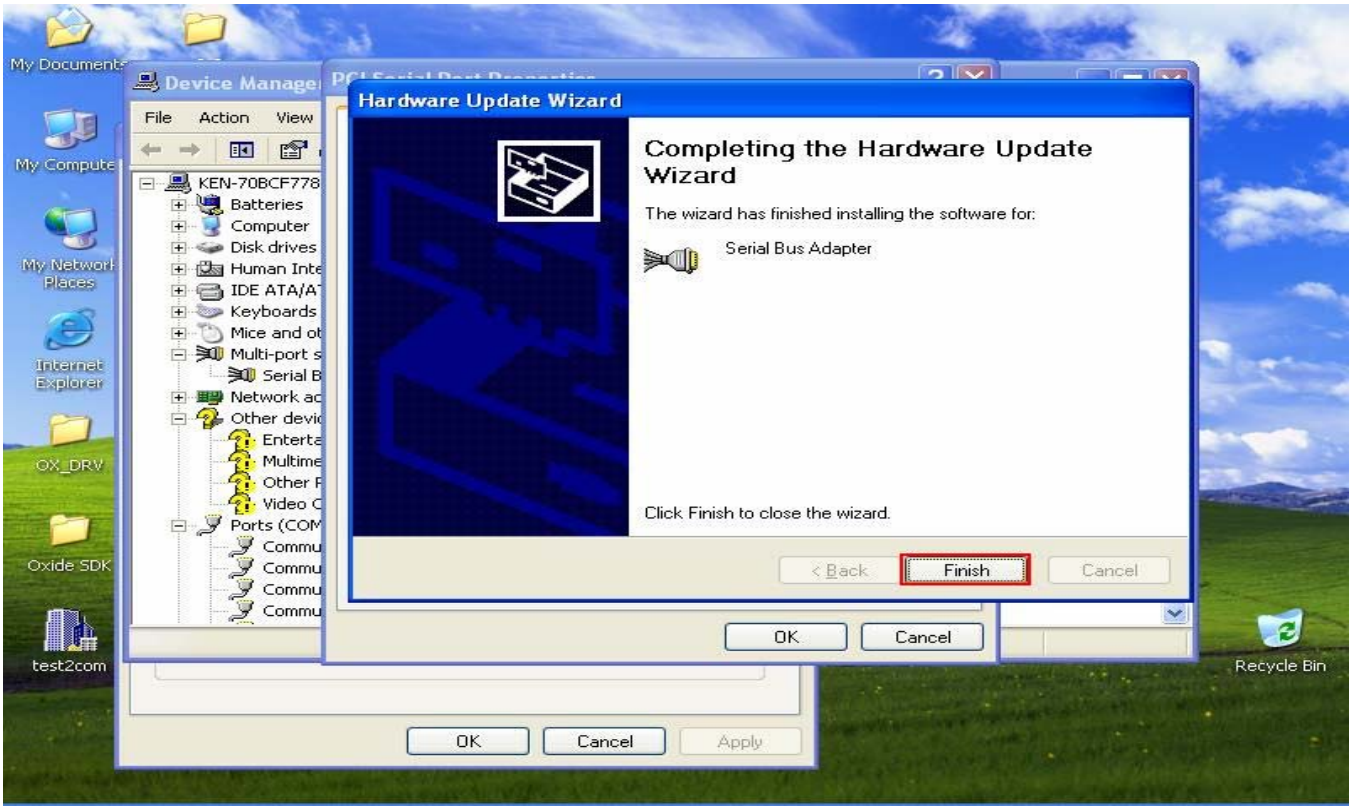
11. Select “Next” to install driver.



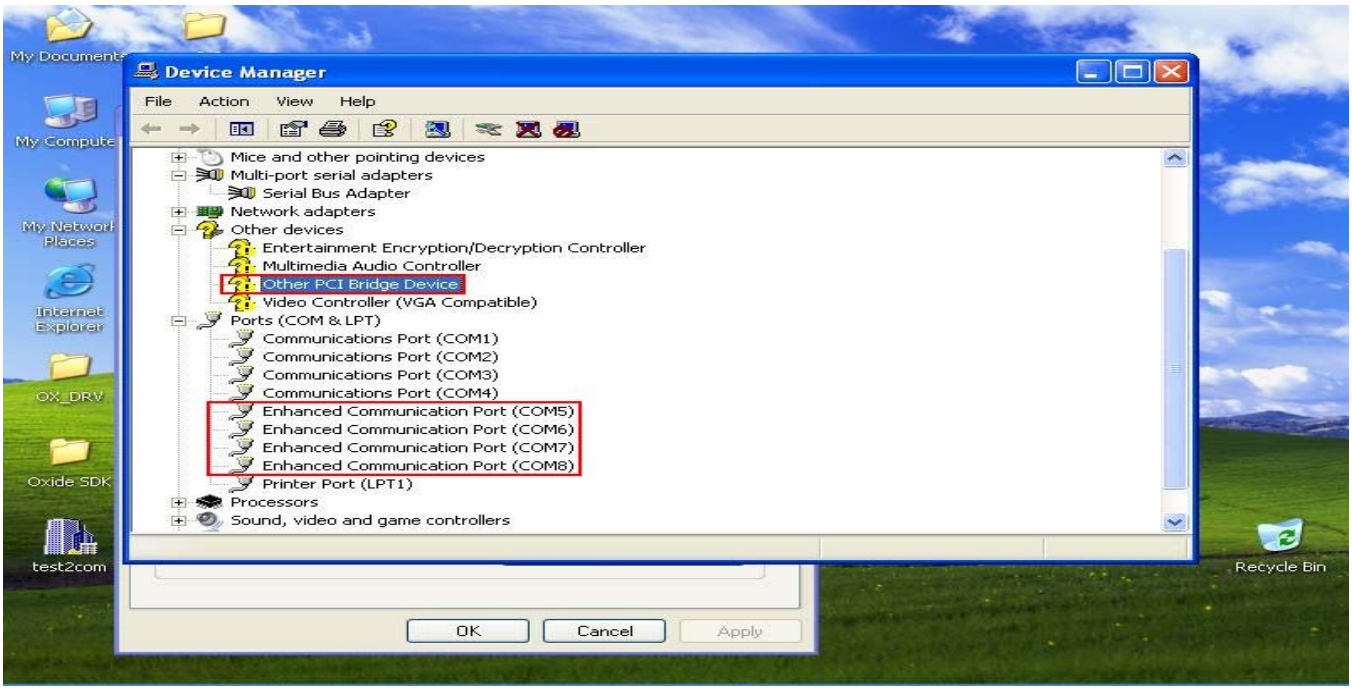
12. Driver files start to copy and install.



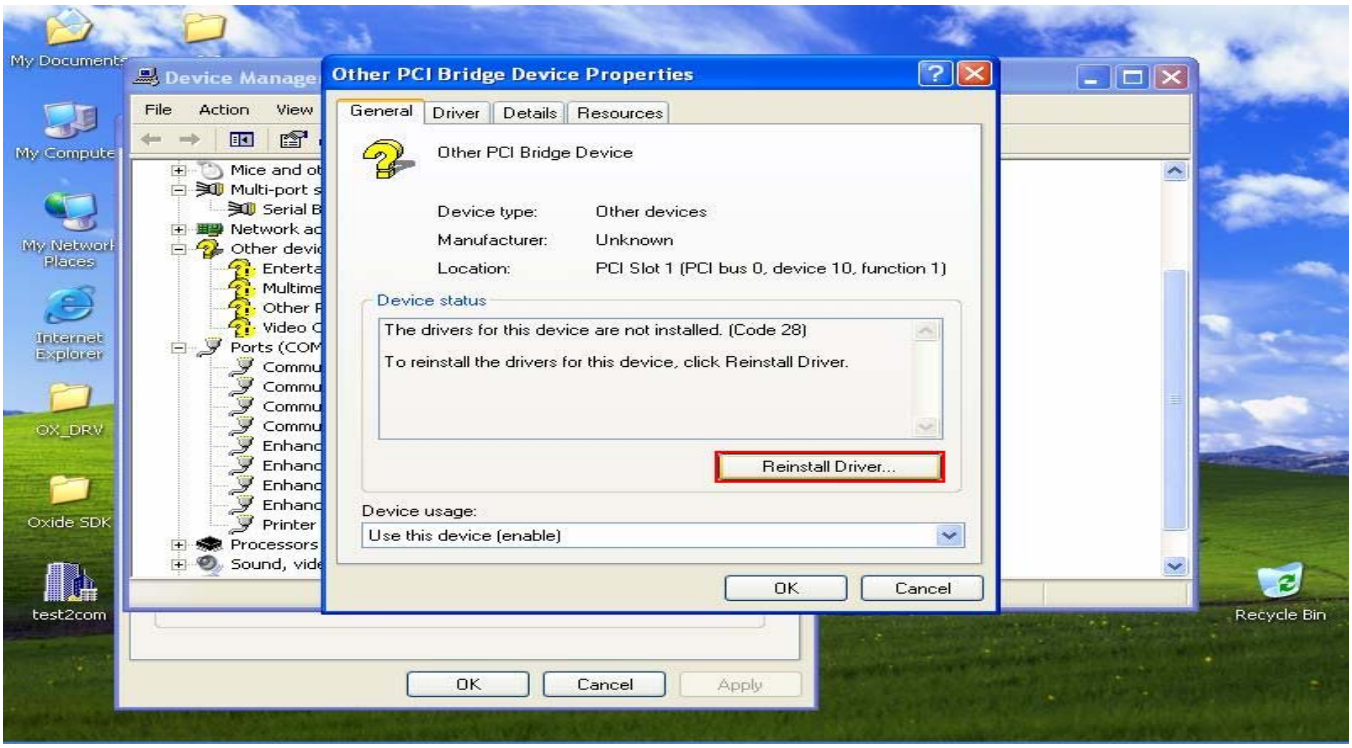
13. When the driver finish the installation of the “PCI Serial Port”, select “Finish”.



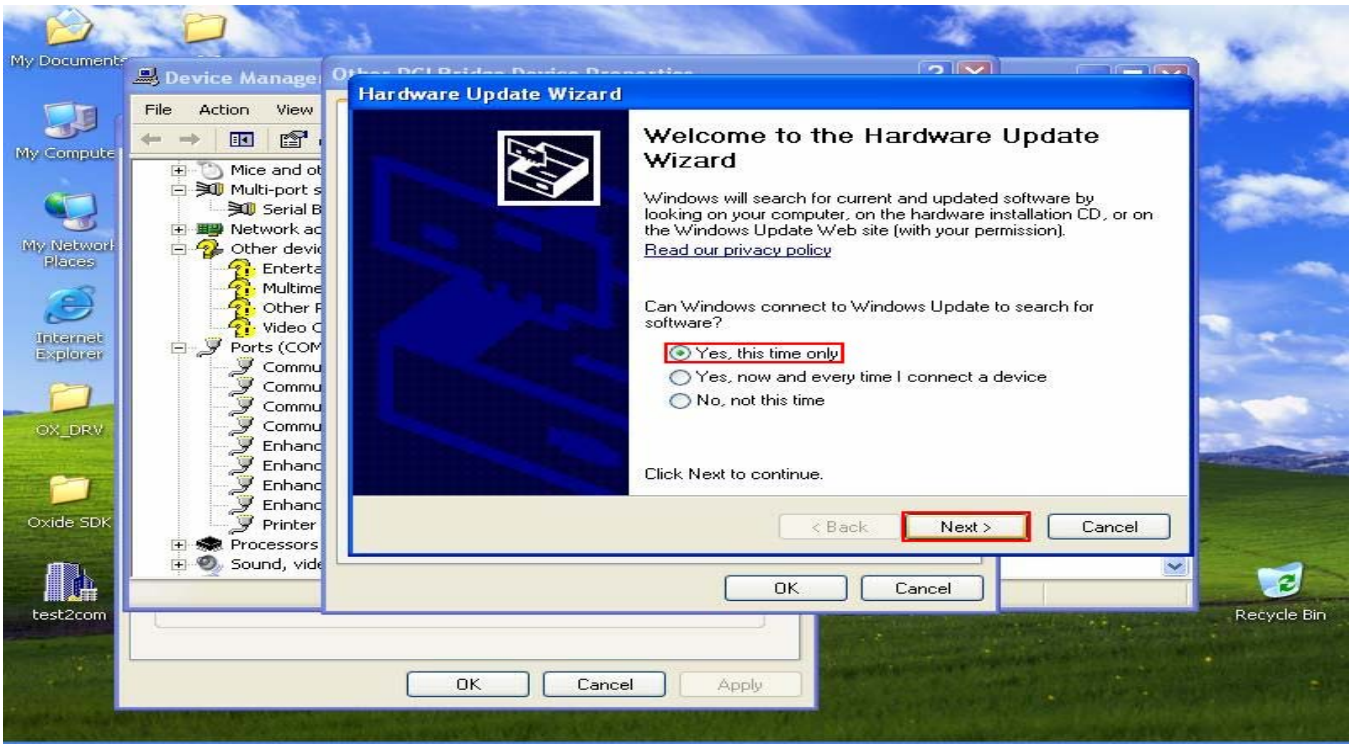
14. You can see 4 “Enhanced Communication Port” add. Click the right button of mouse on “? Other PCI Bridge Device” icon, the screen show the function list then select the “Properties” function.



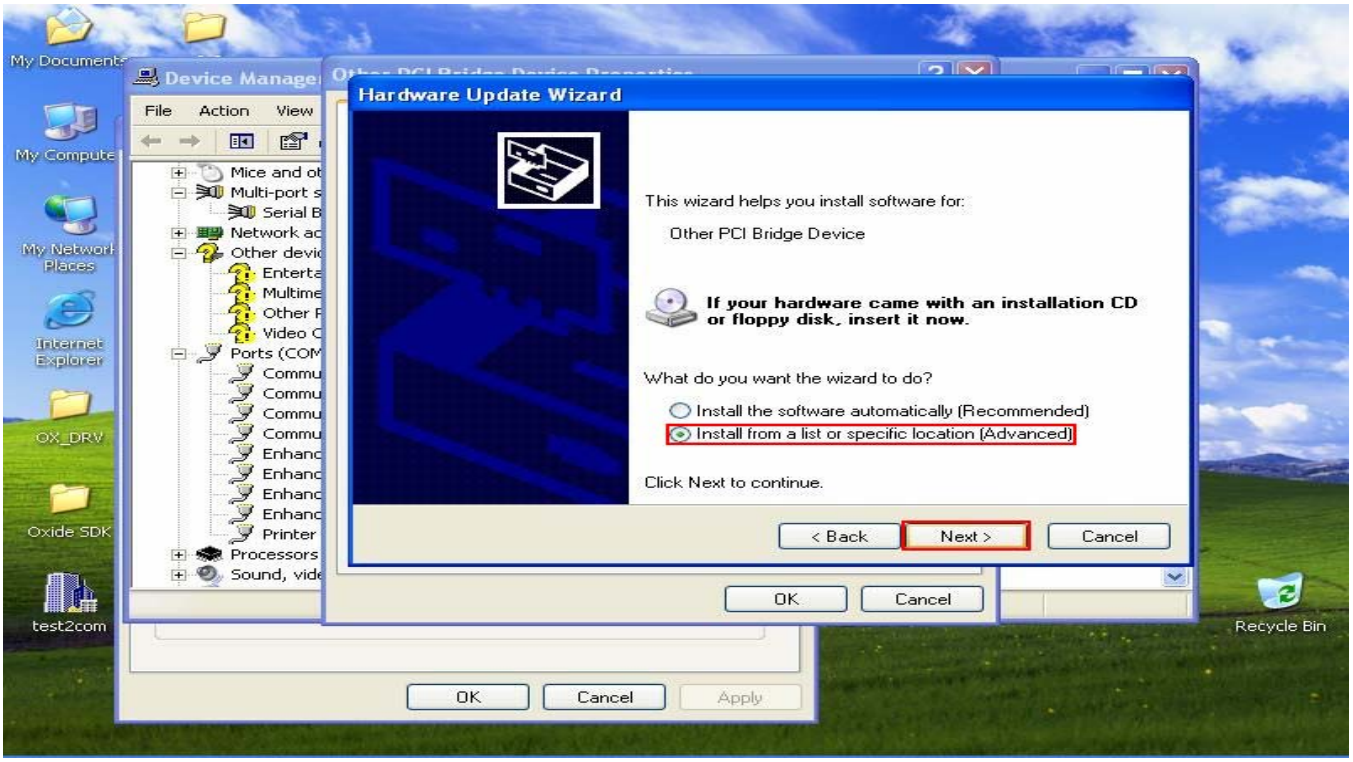
15. When “? Other PCI Bridge Device” icon Properties appear on screen, select “Reinstall Driver” item.



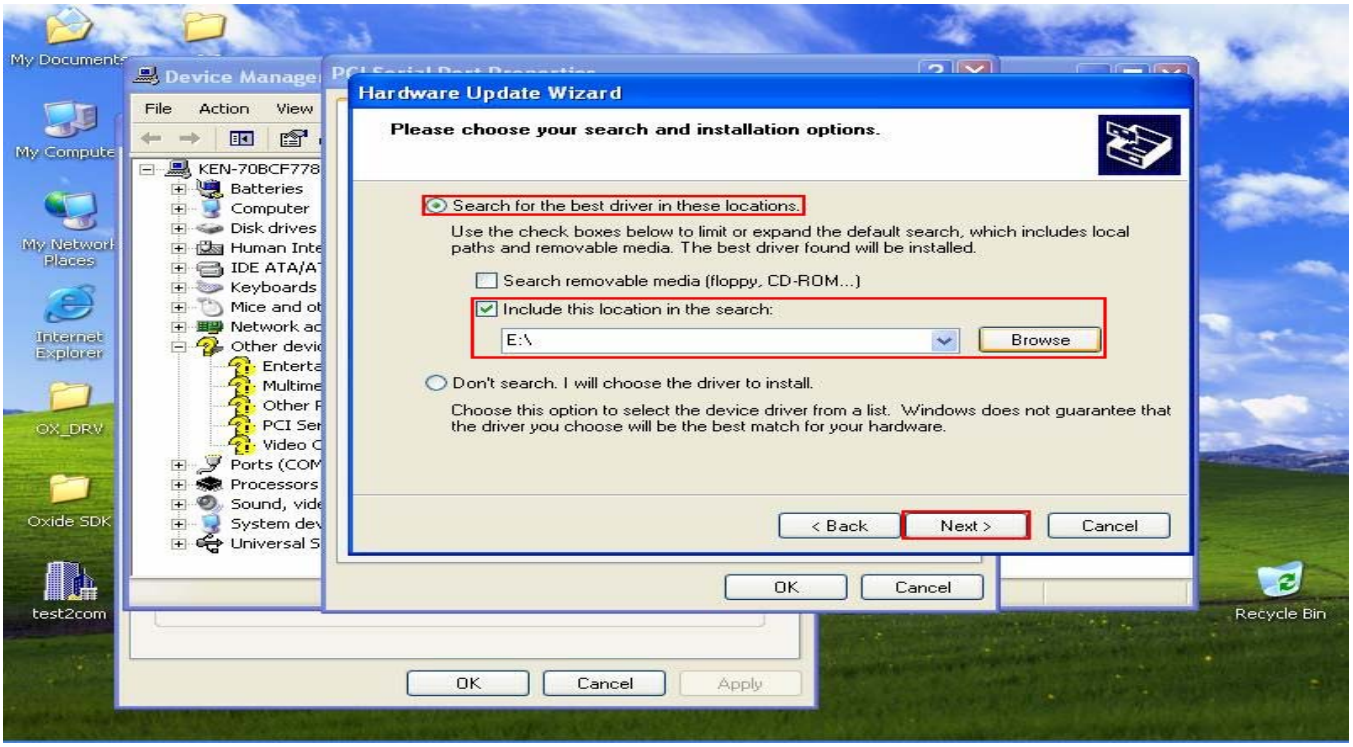
16. After driver install screen appear, select “Yes, this time only” then select “Next”.



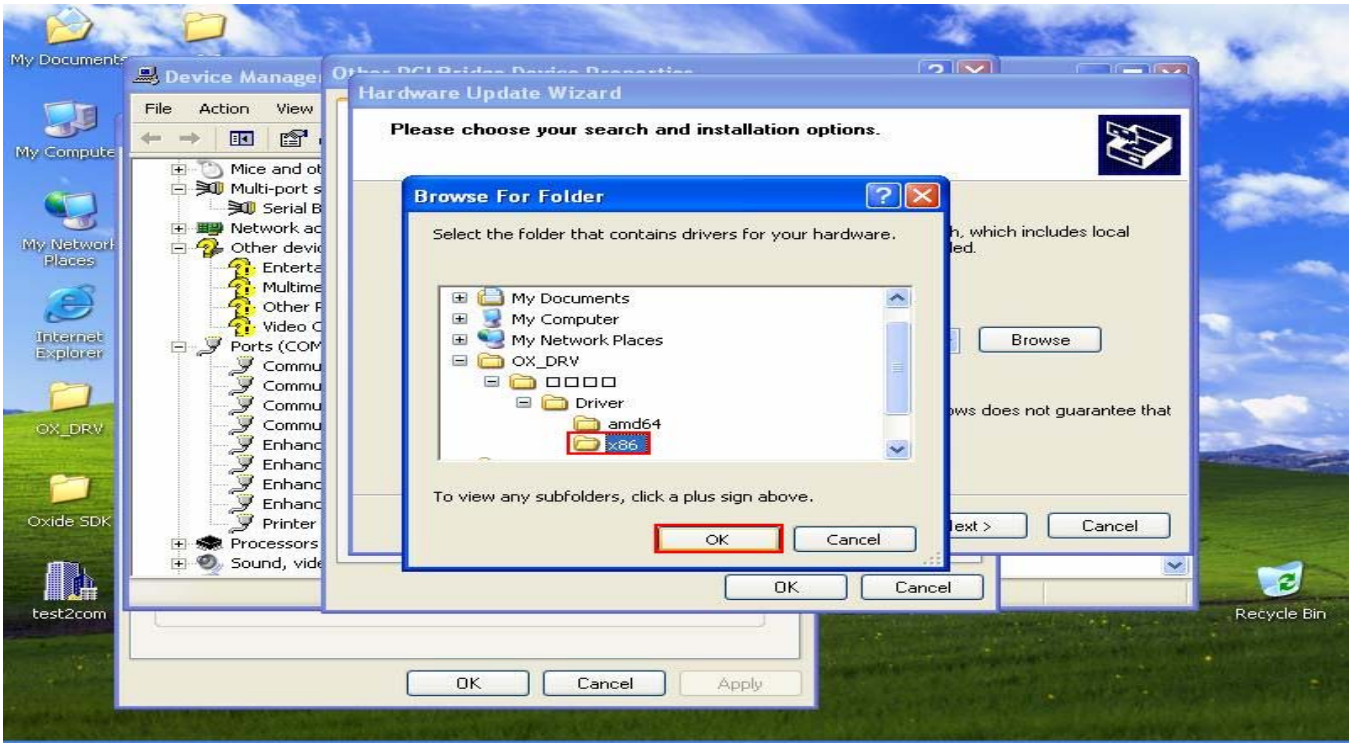
17. Select “Install from a list or specific location (Advanced)” then select “Next”.



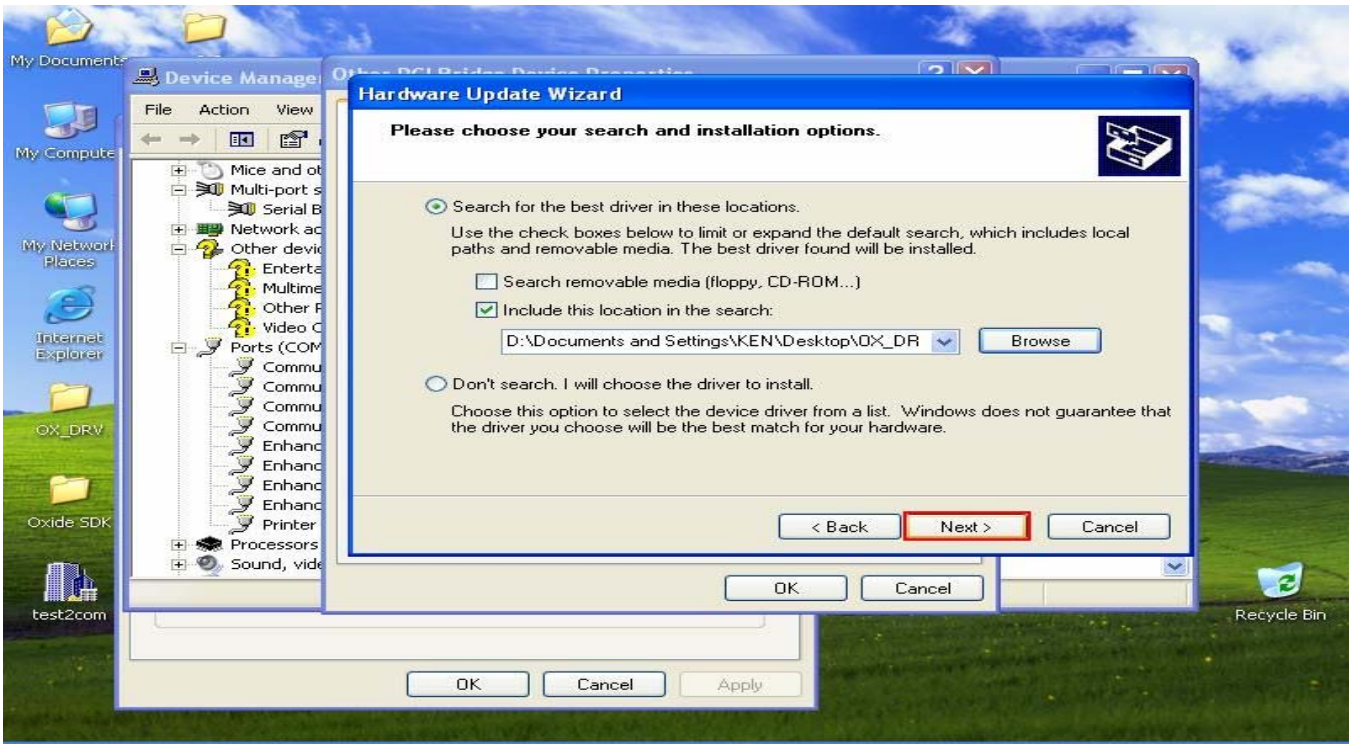
18. Select “Search for the best driver in these locations” then select “Include this location in the search”. Select “Browse” for the file path of driver location then select “Next”.


Hardware Update Wizard
Please choose your search and installation options.
Search for the best driver in these locations.
Use the check boxes below to limit or expand the default search, which includes local paths and removable media. The best driver found will be installed.
Search removable media (floppy, CD-ROM...)
Include this location in the search:
E:\
Browse
Don't search. I will choose the driver to install.
Choose this option to select the device driver from a list. Windows does not guarantee that the driver you choose will be the best match for your hardware.
< Back
Next >
Cancel
OK
Cancel
Apply

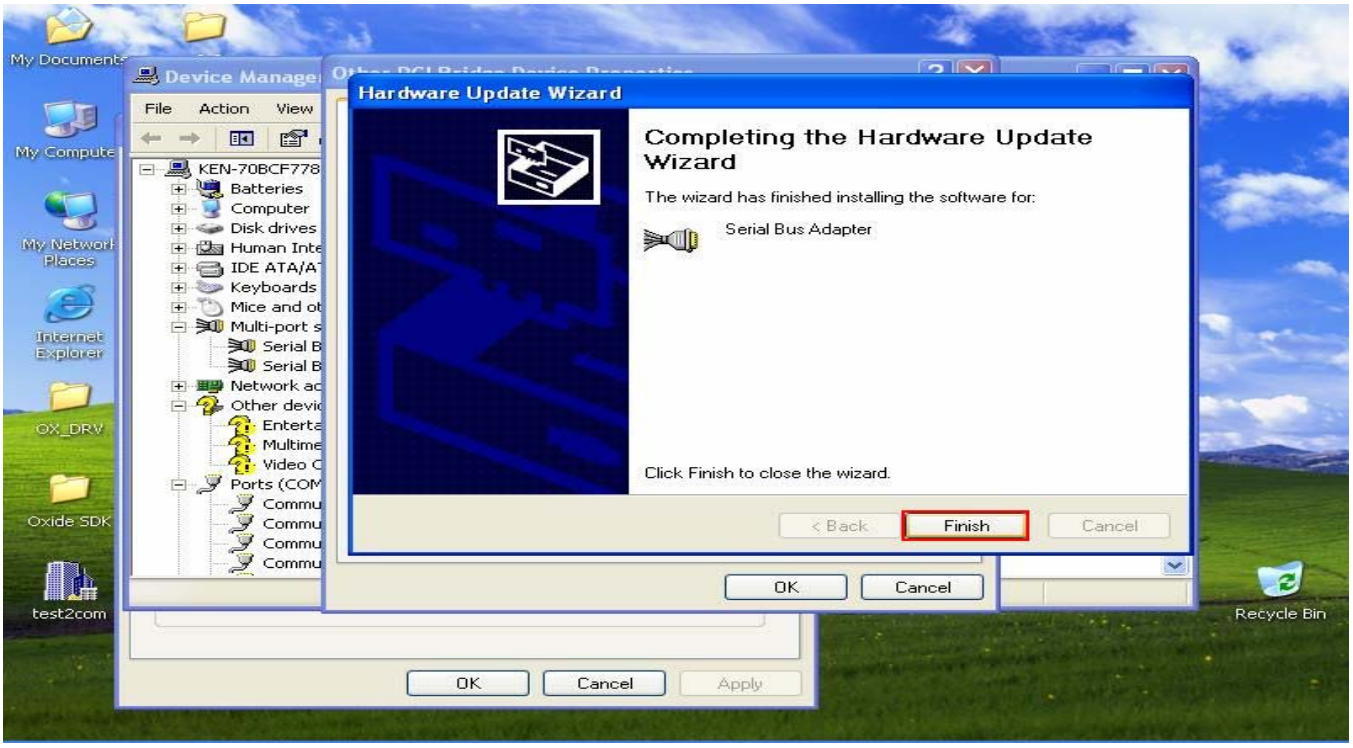
19. Select the file path of driver location then select “OK”.



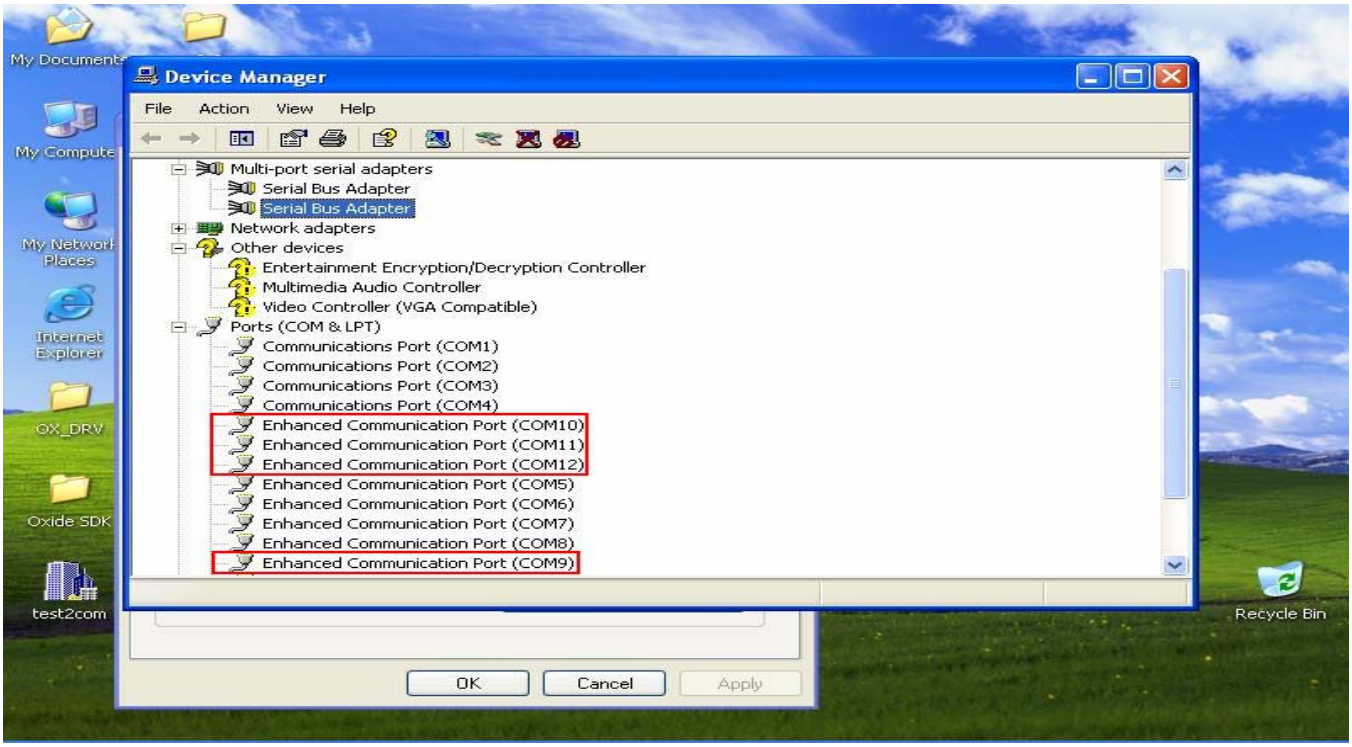
20. Select “Next” to install driver.


Hardware Update Wizard
Please choose your search and installation options.
Search for the best driver in these locations.
Use the check boxes below to limit or expand the default search, which includes local paths and removable media. The best driver found will be installed.
Search removable media (floppy, CD-ROM...)
Include this location in the search:
D:\Documents and Settings\KEN\Desktop\OX_DR
Browse
Don't search. I will choose the driver to install.
Choose this option to select the device driver from a list. Windows does not guarantee that the driver you choose will be the best match for your hardware.
< Back
Next >
Cancel
OK
Cancel
OK
Cancel
Apply

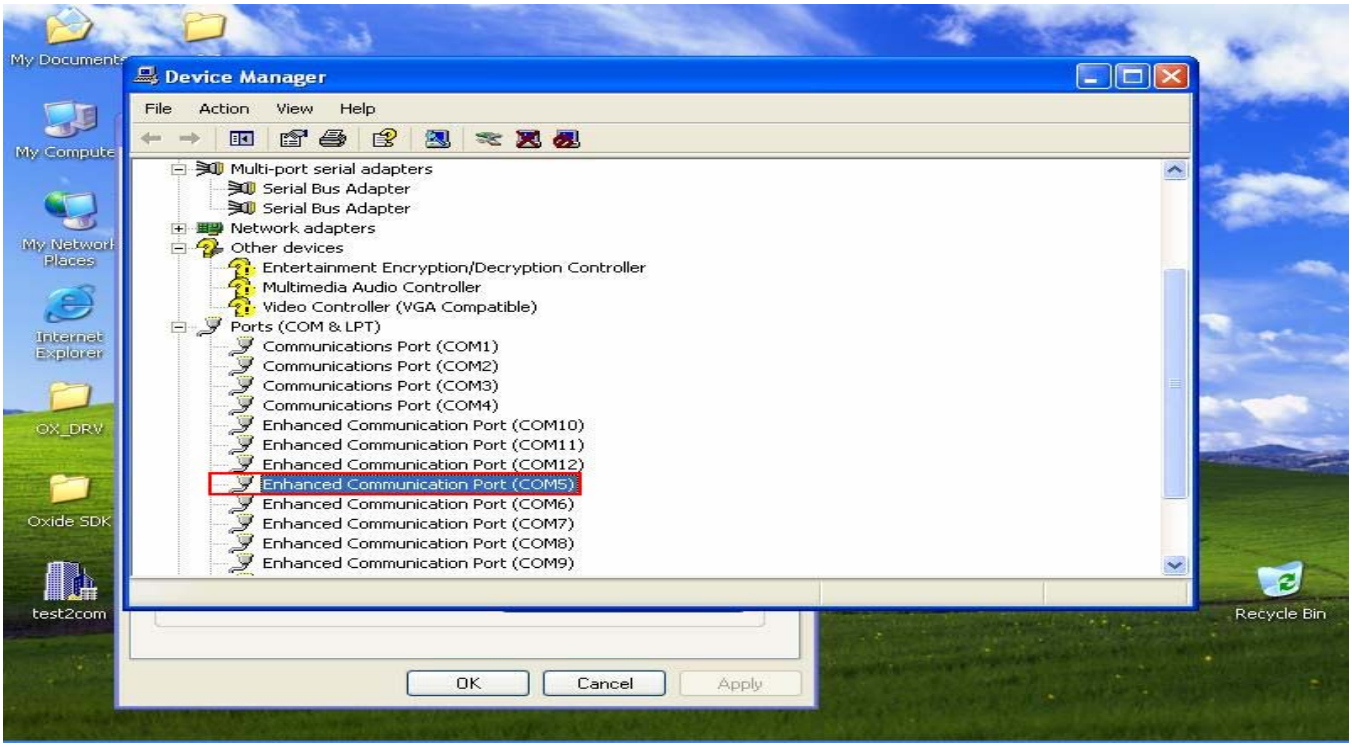
21. Driver files start to copy and install. When the driver finish the installation of the “Other PCI Bridge Device”, select “Finish”.



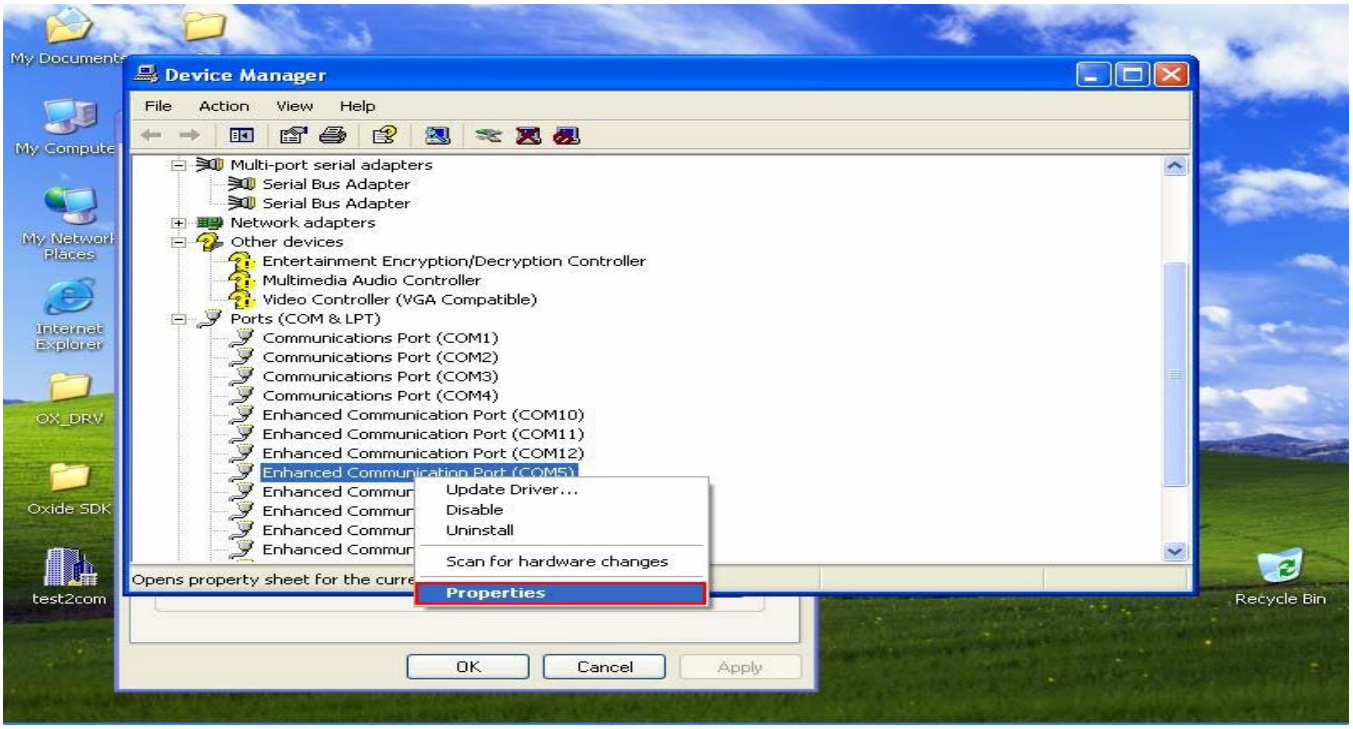
22. You can see 4 “Enhanced Communication Port” be added.



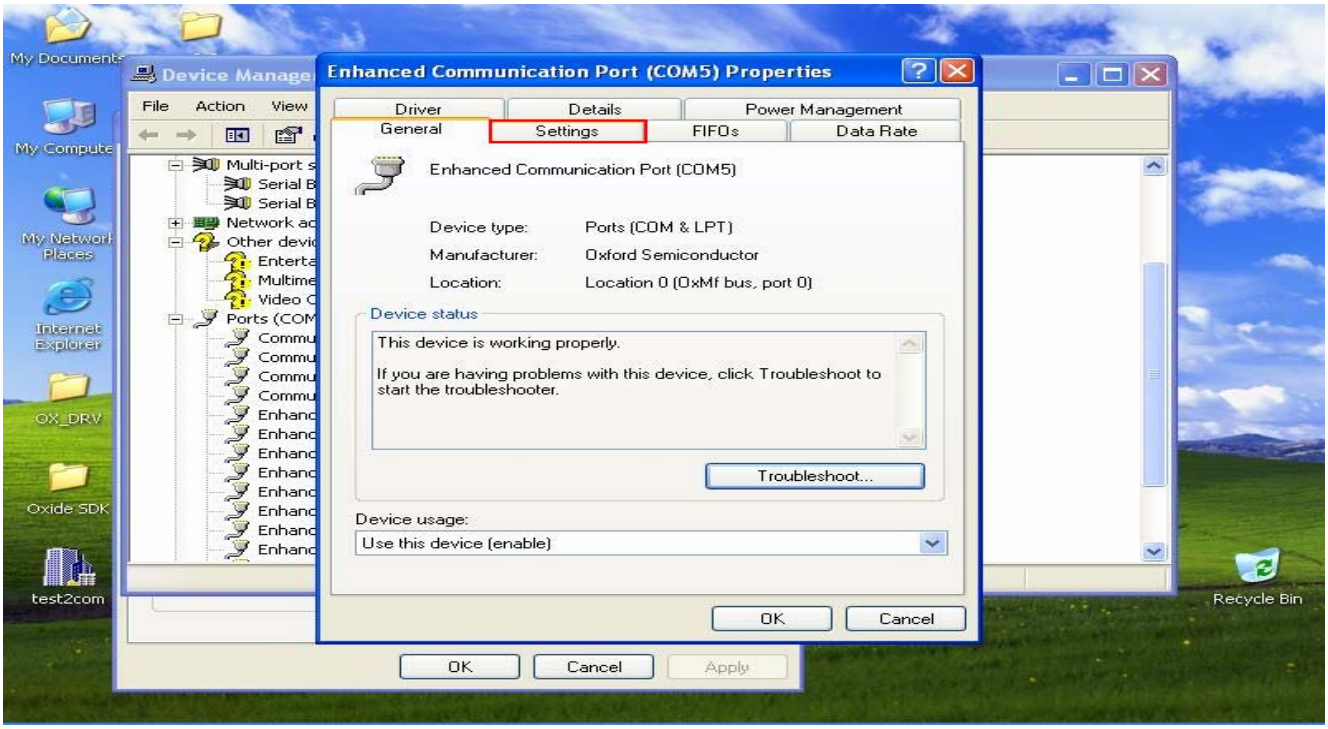
23. If you want adjust the COM port setting, click the right button of mouse on the COM port icon.



24. Select the “Properties” function.



25. When the COM Port icon Properties appear on screen, select “Settings” item.



26. When the properties of the COM Port icon appear on screen, select the item which you want to change, such as the sequence of the COM Port, if you setup the COM Port finish, select “OK”, the setting will be changed.